



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Wainwright et al.

Examiner: Drew E. Becker

Serial No: 09/936,242

Group Art Unit: 1761

Filing Date: February 1, 2002

Docket: 294-107 PCT/US/RCE II

For: AMYLOPECTIN POTATO FLAKES OR
GRANULES AND THEIR USE IN SNACK
FOODS

Dated: October 24, 2006

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION UNDER 37 CFR 1.132

I, Pieter L. Buwalda, state the following:

1. I am a Food Starch Specialist at the Food Competence Center of the international co-operative AVEBE in Foxhol, The Netherlands, the world's largest manufacturers of potato starch derivatives. I took up this position on December 1 of 2001.
2. Before that I was associated with the Chemistry Department of AVEBE for a period of almost twelve years where I performed research on various starch applications, the last five years mainly food oriented. My specialisation is Chemistry of Starch.
3. I hold a PhD degree in Organic Chemistry from the University of Groningen, the Netherlands, and have written a number of publications and am a co-inventor of various patents relating to Starch Chemistry. In 1997, for instance, I acted as an author on Granular and Molecular Structure of Starch, The 3rd CAFST International Symposium, page 109.
4. A list of my publications was attached to the declaration filed on November 18, 2005.

BEST AVAILABLE COPY

Declaration under 37 CFR 1.137
Wainright et al.
U.S. Serial No. 09/936,242
Filed: February 1, 2002
Page 2

Docket No. 294/107 PCT/US/RCE II

5. One of the discoveries of the above-identified invention is that snack foods made of potato flakes and/or granules with high amylopectin starch content have unexpectedly increased expansion *vis-à-vis* snack foods made of natural potato starch. The examples of the present application clearly demonstrate such increased expansion.

6. The Examiner confuses the potato flakes and the dough made from the potato flakes, as disclosed by Martines-Serna Villagran *et al.* (U.S. Patent No. 6,544,580, hereinafter "Villagran *et al.*"). It is true that the reference discloses using a starch-based material which can be selected from different sources, including waxy corn starch (see col. 3, l. 51-65), but this starch-based material is not part of the potato flakes, but added to the potato flakes to produce a dough (see col. 10, l. 27-34). In contrast, the present invention requires that the potato flakes or granules themselves comprise starch having an amylopectin content of at least 95%.

7. Villagran *et al.* describe a process for the production of potato flakes that results in the control of the physical properties of the flakes. In the process, cooking is performed in a controlled manner, e.g., in the first 1/3 of the cooking cycle the temperature rises slowly and the cooking is even and performed without cooling. The trick of the cooking process of Villagran *et al.* is to ensure that amylose is not entrapped in the amylopectin upon gelatinization because that would yield a sticky dough. In the process, amylose is removed from the starch granules; but remains in the flake.

Villagran *et al.* describe how their process can be quantified. Included in this quantification is a measurement of free starch. This measurement is done indirectly, i.e., by way of measuring free amylose. A low amount of free amylose indicates a higher amount of starch remaining in the starch granules; and analogously, a high amount of free amylose indicates a low amount of starch in the granules. However, since amylose is not removed from the potato flakes, the total amount of amylose in the flake is virtually unaffected.

Declaration under 37 CFR 1.137
Wainright et al.
U.S. Serial No. 09/936,242
Filed: February 1, 2002
Page 3

Docket No. 294/107 PCT/US/RCE II

Examples 4 and 5 of Villagran *et al.* demonstrate that amylose is not removed from the potato flakes. Example 4 describes a too fast cooking procedure. When cooking too quickly, the amylose remains entrapped within the amylopectin network. Example 5, which is in accordance with the Villagran *et al.* invention, describes a slow cooking procedure. Amylose is freed from the starch granules. This phenomenon is monitored by Villagran *et al.* indirectly, viz. by measuring amylose content within the starch granule.

8. The method that Villagran *et al.* is using for the determination of free starch, which is by measuring the amount of free amylose is not applicable to the starch of the current invention since virtually no amylose is present in the potatoes and flakes.

9. It is common knowledge in the art that potato flakes contain about 20 wt.% non-starch components, such as proteins, fibers, non-reducing sugars and amino acids. Villagran *et al.* state "The resulting dehydrated potato flakes comprise from about 19% to about 27% amylose, from about 5% to about 10% moisture, at least about 0.1% emulsifier and a water absorption index of from about 7.7 to about 9.5." (See col. 6, lines 49-52.) For the "preconditioned" potato pieces, Villagran *et al.* state that the dehydrated potato flakes resulting from the pre-conditioned process comprise from about 16% to about 20% amylose, from about 5% to about 10% moisture, at least 0.1% emulsifier, and a water absorption index of from about 6.7 to about 8.3. (See col. 7, lines 30-34.) Since potato flakes contain about 20 wt.% non-starch components, the amylopectin content in the flakes is be considerably less than 84 wt.%.

BEST AVAILABLE COPY

Declaration under 37 CFR 1.137
Wainright et al.
U.S. Serial No. 09/936,242
Filed: February 1, 2002
Page 4

Docket No. 294/107 PCT/US/RCE II

10. Neither Tallberg (see col. 7, lines 25-40), nor Stahl (see col. 1, l. 63 through col. 2, l. 9), nor Jeffcoat teaches the use of potato flakes or granules to produce a food product. At best, they teach that a starch isolated from potatoes can be used for producing a food product.

11. I hereby declare that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true. Further that these statements were made with the knowledge that willfully false statements, and the like, so made are punishable by fine or imprisonment or both under Section 1001 of Title 18 of the United States Code, and that such willfully false statements may jeopardize the validity of the application of any patent issued thereon.



Pieter L. Buwalda

225317_1

25/10/06

BEST AVAILABLE COPY